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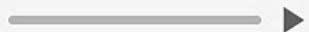


Coach



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Answer the following questions regarding the reversible causes of cardiac arrest.

1

2

Which of the following are the "T" causes of reversible cardiac arrest?

You got it!

- Your Answer | Coronary thrombosis
- Your Answer | Pulmonary thrombosis
- Your Answer | Tension pneumothorax
- Your Answer | Toxins
- Your Answer | Cardiac tamponade



CHALLENGE US

NEXT

## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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## 4 ELEMENTS OF AN INTEGRATED SYSTEM OF CARE

A system is a group of interdependent components that regularly interact to form a whole.

### The system

Provides the links for the Chain of Survival

Determines the strength of each link and of the chain

Determines the ultimate outcome

Provides collective support and organization

Healthcare delivery requires structure (eg, people, equipment, education) and processes (eg, policies, protocols, procedures) that when integrated produce a system (eg, programs, organizations, cultures) leading to outcomes (eg, patient safety, quality, satisfaction). This integrated response, known as a **system of care**, comprises all 4 of these elements—**structure, processes, system, and patient outcome**—in a framework of continuous quality improvement.

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NEXT

CHALLENGE US



Self-Assessment



How well do you know this subject? Your learning path will be adjusted accordingly.



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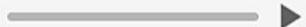
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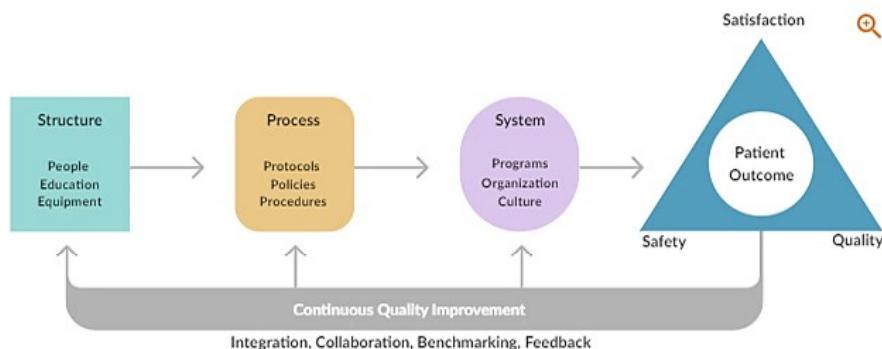


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## 4 ELEMENTS OF AN INTEGRATED SYSTEM OF CARE

These systems require individuals and groups to share information so that they can evaluate and improve their system. Leadership and accountability are important components of this team approach. Participants and leaders in systems of care must also assess the performance of each system component; only after this assessment can they effectively intervene to improve care.



PREVIOUS

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### Self-Assessment

How well do you know this subject? Your learning path will be adjusted accordingly.



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THINK I GOT IT

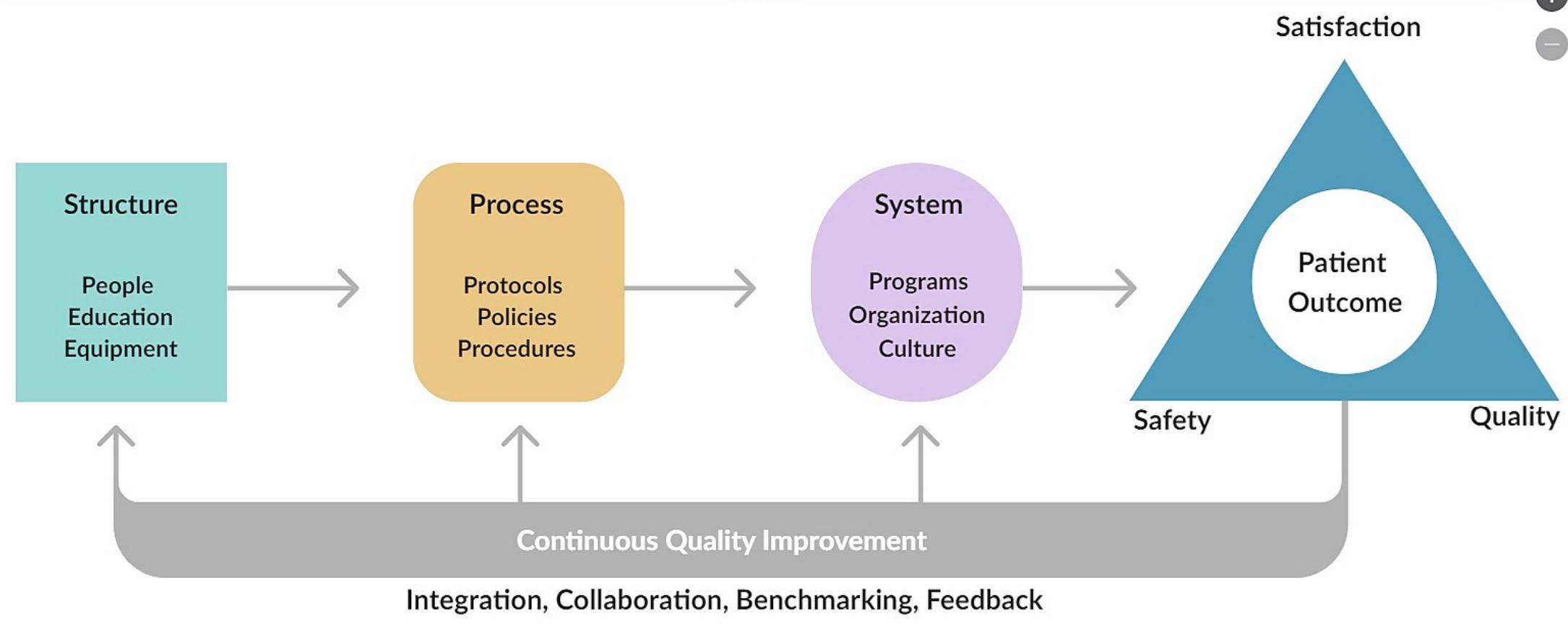
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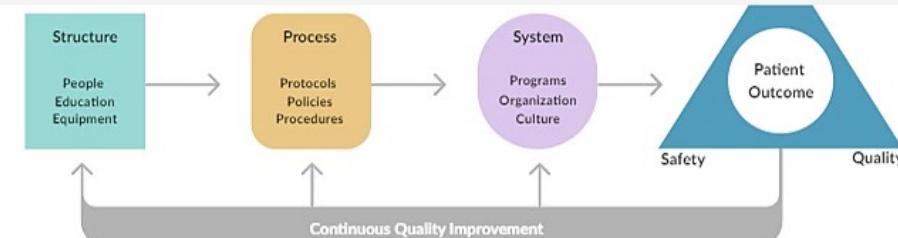
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Continuous Quality Improvement

Integration, Collaboration, Benchmarking, Feedback

## 4 ELEMENTS OF AN INTEGRATED SYSTEM OF CARE



The continuous quality improvement process consists of an iterative cycle of

- Systematically evaluating care and outcome
- Creating benchmarks with stakeholder feedback
- Strategically addressing identified deficiencies

PREVIOUS 1 2

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CHALLENGE US 

Self-Assessment 

How well do you know this subject? Your learning path will be adjusted accordingly.



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CARDIAC ARREST AND POST-CARDIAC ARREST SYSTEMS OF CARE

Heart Cardiac Arrest and Post-Cardiac Arrest Systems of Care

Successful resuscitation requires integrated, coordinated actions. Experts believe that high survival rates from both in- and out-of-hospital sudden cardiac arrest are possible with strong systems of care.

Several factors have been associated with improved survival in patients with cardiac arrest:

- Training healthcare providers to become more knowledgeable about what improves survival rates.
- Proactive planning and simulation of cardiac arrest to provide the opportunity for a healthcare provider to practice and improve responding to cardiac arrest.
- Rapidly recognizing sudden cardiac arrest.
- Immediately providing high-quality CPR.
- Providing early defibrillation, as soon as a defibrillator is available.
- Providing goal-directed, time-sensitive post-cardiac arrest care.

1 2 NEXT

CHALLENGE US ?

Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



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Coach



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## CARDIAC ARREST AND POST-CARDIAC ARREST SYSTEMS OF CARE

The links in the system-specific Chains of Survival represent these actions. The **Chain of Survival** is a metaphor used to organize and describe the integrated set of time-sensitive coordinated actions necessary to maximize survival. The use of evidence-based education and implementation strategies can optimize the links in the chain. However, 2 separate chains were created to reflect the differences in the steps needed for response to cardiac arrest in-hospital and out-of-hospital.

Activation of  
Emergency Response

High-Quality CPR

Defibrillation

Advanced  
ResuscitationPost-Cardiac  
Arrest Care

Recovery

PREVIOUS

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THINK I GOT IT

I DON'T GET IT

CHALLENGE US

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Self-Assessment ?

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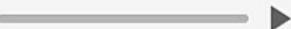


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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## RAPID RESPONSE SYSTEM

The purpose of a rapid response team (RRT) or medical emergency team (MET) is to improve patient outcomes by identifying and treating early clinical deterioration.

### Components

The rapid response system has several components:

- Event detection and response triggering arm
- A planned response arm, such as a RRT or MET
- Quality monitoring
- Administrative support

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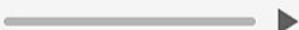
CHALLENGE US ?



Coach



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Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## RAPID RESPONSE SYSTEM

### Signs of Clinical Deterioration

Some rapid response systems weigh, combine, and score specific physiologic criteria to determine when to act. The criteria for adult patients include

- Airway compromise
- Respiratory rate less than 6/min or more than 30/min
- Heart rate less than 40/min or greater than 140/min
- Systolic blood pressure less than 90 mm Hg
- Symptomatic hypertension
- Unexpected decrease in level of consciousness
- Unexplained agitation
- Seizure
- Significant decrease in urine output

PREVIOUS

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THINK I GOT IT

I DON'T GET IT

CHALLENGE US

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Ahmed Othman A WiFi ←

Coach



Learn more here:

Rapid Response System

○ ●

What are signs of clinical deterioration that would prompt the activation of a rapid response system?

You got it!

- Your Answer | Unexplained agitation
- Your Answer | Symptomatic hypertension
- Your Answer | Seizure

I Know It

CHALLENGE US

NEXT

Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



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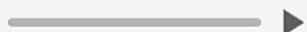


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What is the primary purpose of a rapid response team (RRT) or medical emergency team (MET)?

CHOOSE THE CORRECT ANSWER

To improve patient outcomes by identifying and treating early clinical deterioration

To provide diagnostic consultation to emergency department patients

To provide online consultation to emergency medical services personnel in the field

To improve care for patients admitted to critical care units

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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Coach



Learn more here:

Rapid Response System



Your Answer

| To improve patient outcomes by identifying and treating early clinical deterioration



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

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## HOW A RAPID RESPONSE SYSTEM HELPS PREVENT IN-HOSPITAL CARDIAC ARREST

 Improving IHCA Survival

The best way to improve a patient's chance of survival from an IHCA is to prevent it from happening. IHCAAs are often preceded by changes in patients' vital signs that are evident with routine monitoring. The prevention approach has required a significant cultural shift within institutions.

Cardiac arrest teams have traditionally focused on responding only after an arrest has occurred, but hospitals have recently begun to expand the focus to include patient safety and prevention of arrest. Teams that rapidly assess and intervene when patients have abnormal vital signs can decrease the number of IHCAAs, improving rates of morbidity and mortality rather than merely reacting to a catastrophic event.

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THINK I GOT IT

I DON'T GET IT

CHALLENGE US 

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



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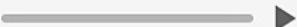


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### What happens when teams rapidly assess and intervene when patients have abnormal vital signs?

CHOOSE THE CORRECT ANSWER

The number of out-of-hospital cardiac arrests increases

The number of in-hospital cardiac arrests decreases

Morbidity and mortality rates are maintained

Morbidity and mortality rates increase

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

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Coach



Learn more here:

 How a Rapid Response ...**What happens when teams rapidly assess and intervene when patients have abnormal vital signs?****You got it!**

Your Answer

| The number of in-hospital cardiac arrests decreases



I Know It

CHALLENGE US

NEXT

**Self-Assessment**

Adjust your competence estimate to the right to focus on the questions



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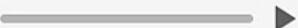
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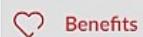


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## IMPACT OF RAPID RESPONSE TEAMS (RRTS) AND MEDICAL EMERGENCY TEAMS (METS)



Benefits

Although the ideal composition of METs and rapid response systems is not known, many published before-and-after studies have reported a drop in the rate of cardiac arrests after these teams intervene. Other documented benefits of these systems include

- Decreased unplanned emergency transfers to the ICU.
- Decreased ICU and total hospital length of stay.
- Reduced postoperative morbidity and mortality rates.
- Improved rates of survival from cardiac arrest.

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THINK I GOT IT

I DON'T GET IT

CHALLENGE US



Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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Coach



Learn more here:

Impact of Rapid Respon...



In addition to decreased IHCA, what are some other benefits of implementing a rapid response system?

You got it!

Your Answer | Decreased ICU length of stay

Your Answer | Decrease in total hospital length of stay

 Think So

CHALLENGE US

**NEXT**

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions

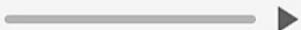


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Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## KEY COMPONENTS OF AN EFFECTIVE HIGH-PERFORMANCE TEAM

High-performance teams are essential to successful resuscitation attempts. High-performance teams carry out their roles in highly effective manners, resulting in superior performance and timing, which can translate to improved survival for patients in cardiac arrest. What distinguishes high-performance teams from others is that each team member is a commitment to ensuring the highest-quality performance of the team rather than simply following orders.

To function effectively, a high-performance team needs to focus on **timing, quality, coordination, and administration**.



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NEXT

CHALLENGE US ?

## ⌚ Timing

- Time to first compression
- Time to first shock
- CCF ideally greater than 80%
- Minimizing preshock pause
- Early EMS response time

## ⚙️ Quality

- Rate, depth, and recoil
- Minimizing interruptions
- Switching compressors
- Avoiding excessive ventilations
- Use of a feedback device



## 🕒 Coordination

Team dynamics: Team members working together, proficient in their roles

## 📋 Administration

- Leadership
- Measurement
- Continuous quality improvement
- Number of code team members

Coach



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Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## KEY COMPONENTS OF AN EFFECTIVE HIGH-PERFORMANCE TEAM

## High-Performance Team Dynamics

Successful high-performance teams not only have medical expertise and mastery of resuscitation skills but also demonstrate effective communication and team dynamics.

One of the measures of a high-performance team is the ability to achieve specific performance metrics and a high chest compression fraction, or CCF. You can only achieve a high CCF by minimizing pauses during high-quality CPR. The Resuscitation Outcomes Consortium, or ROC, trials showed that an 11% increase in CCF is roughly equal to a 10% increase in survival. Pauses typically occur during intubation, rhythm analysis, pulse checks, compressor switches, and defibrillation.

## Recommendations

- Hover over the chest
  - Whenever compressions are paused, Compressors should hover over the chest (not touching it) and be prepared to resume compressions.

PREVIOUS

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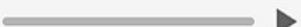
CHALLENGE US ?



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## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## KEY COMPONENTS OF AN EFFECTIVE HIGH-PERFORMANCE TEAM

## Recommendations

- Hover over the chest
  - Whenever compressions are paused, Compressors should hover over the chest (not touching it) and be prepared to resume compressions.
- Before pausing compressions
  - Fifteen seconds before pausing compressions at the end of each 2-minute cycle, high-performance teams should check for a pulse, precharge the defibrillator, and be prepared to deliver a shock in 10 seconds or less.
- Switch Compressors
  - Switch Compressors, with the second Compressor coming in from behind the first. This allows the second Compressor to have the same view of the team—and, in particular, of the AED or defibrillator. For seamless transitions, switching between cycles every 2 minutes is best. However, if a Compressor needs to switch because of fatigue, coordinate the switch to happen as fluidly as possible, such as while delivering breaths.

PREVIOUS

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I DON'T GET IT

CHALLENGE US

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## KEY COMPONENTS OF AN EFFECTIVE HIGH-PERFORMANCE TEAM

- Fifteen seconds before pausing compressions at the end of each 2-minute cycle, high-performance teams should check for a pulse, precharge the defibrillator, and be prepared to deliver a shock in 10 seconds or less.
- Switch Compressors
  - Switch Compressors, with the second Compressor coming in from behind the first. This allows the second Compressor to have the same view of the team—and, in particular, of the AED or defibrillator. For seamless transitions, switching between cycles every 2 minutes is best. However, if a Compressor needs to switch because of fatigue, coordinate the switch to happen as fluidly as possible, such as while delivering breaths.
- Real-time feedback devices
  - It's a best practice to use real-time feedback devices during CPR. However, if a feedback device isn't available, a metronome can help establish the proper rate. If your AED or defibrillator doesn't have a metronome, you can download a metronome app to your mobile device before the conclusion of this course.

PREVIOUS 1 2

I KNEW GOT IT NOW THINK I GOT IT I DON'T GET IT

CHALLENGE US ?

Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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Which component of effective high-performance teams is represented by the use of real-time feedback devices?

CHOOSE THE CORRECT ANSWER

Administration

Timing

Quality

Coordination

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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Which component of effective high-performance teams is represented by the use of real-time feedback devices?

You got it!

Your Answer | Quality

I Know It CHALLENGE US **NEXT**

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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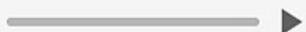


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What is the main advantage of effective teamwork?

CHOOSE THE CORRECT ANSWER

Division of tasks

Mastery of resuscitation skills

Immediate CPR

Early defibrillation

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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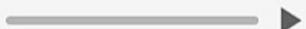


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What is the main advantage of effective teamwork?

Not there yet...

Your Answer | Early defibrillation

Correct Answer | Division of tasks

Think So

CHALLENGE US

**NEXT**

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



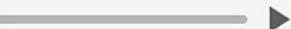
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## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## ROLES OF HIGH-PERFORMANCE TEAM MEMBERS

**Team Leader Role**

Every high-performance team needs a leader to organize the efforts of the group.

**Team Leader**

- Organizes the group
- Monitors individual performance of team members
- Backs up team members
- Models excellent team behavior
- Trains and coaches
- Facilitates understanding
- Focuses on comprehensive patient care
- Temporarily designates another team member to take over as Team Leader if an advanced procedure needs to be performed (eg, advanced airway placement).

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CHALLENGE US



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## ROLES OF HIGH-PERFORMANCE TEAM MEMBERS

### Team Leader

- Organizes the group
- Monitors individual performance of team members
- Backs up team members
- Models excellent team behavior
- Trains and coaches
- Facilitates understanding
- Focuses on comprehensive patient care
- Temporarily designates another team member to take over as Team Leader if an advanced procedure needs to be performed (eg, advanced airway placement).

### Self-Assessment



Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

1 2 3 **NEXT**

CHALLENGE US





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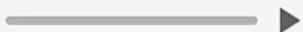


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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## ROLES OF HIGH-PERFORMANCE TEAM MEMBERS

### Team Member Roles

For a successful resuscitation attempt, high-performance team members must be

- Proficient in performing the skills in their scope of practice
- Clear about role assignments
- Prepared to fulfill their role responsibilities
- Well-practiced in resuscitation skills
- Knowledgeable about the algorithms
- Committed to success

PREVIOUS

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CHALLENGE US ?

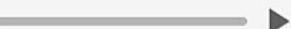
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Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## ROLES OF HIGH-PERFORMANCE TEAM MEMBERS

## CPR Coach

Many resuscitation teams now include the role of CPR Coach. The CPR Coach role does not need to be a separate role but can be integrated into the current responsibilities of the Monitor/Defibrillator.

The CPR Coach supports performance of high-quality BLS skills, allowing the Team Leader to focus on other aspects of clinical care.

Below is a description of actions the CPR Coach will take.

- Coordinate initiation of CPR
- Coach team members to improve quality of chest compressions
- Coach team members to improve quality of ventilations
- State guideline targets
- Help minimize length of pauses in compressions

PREVIOUS

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I KNEW

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THINK I GOT IT

I DON'T GET IT

CHALLENGE US ?



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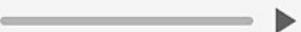


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Which is the best example of a role of the Team Leader?

CHOOSE THE CORRECT ANSWER

Does not overventilate the patient

Models excellent team behavior

Proficient at endotracheal intubation

Performs within scope of practice

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



6% PROGRESS: HeartCode ACLS 2025

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Coach



Learn more here:

Roles of High-Performa...



Which is the best example of a role of the Team Leader?

You got it!

Your Answer | Models excellent team behavior

I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



6% PROGRESS: HeartCode ACLS 2025

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Coach



Learn more here:

Roles of High-Performa...



Which is the best example of a role of a team member?

You got it!

Your Answer

| Prepared to fulfill their role responsibilities



I Know It

CHALLENGE US

NEXT

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



6% PROGRESS: HeartCode ACLS 2025

~3h 53m left

TT Ahmed Othman

A



Coach



Learn more here:

Roles of High-Performa...



What is the primary purpose of the CPR Coach on a resuscitation team?

You got it!

Your Answer | Increasing CPR quality

I Know It      CHALLENGE US      **NEXT**

Self-Assessment

Adjust your competence estimate to the right to focus on the questions

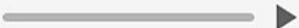


ADVANCED BEGINNER

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ADVANCED BEGINNER

## ELEMENTS OF EFFECTIVE TEAM DYNAMICS

 **Clear Roles and Responsibilities**

Every member of the team should know his or her role and responsibilities because each team member's role is important to the performance of the team. When fewer than 6 people are present, Team Leaders must prioritize these tasks and assign them to the healthcare providers present.

**Positions for 6-Person High-Performance Teams** 



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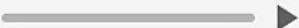
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Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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## ELEMENTS OF EFFECTIVE TEAM DYNAMICS



For efficiency, the **Team Leader** must clearly delegate tasks. Team members should communicate when they can handle additional responsibilities. The Team Leader should encourage team members to participate in leadership and not simply follow directions.

### Team Member

### Task

- | Team Member  | Task   |
|--------------|--|
| Team Leader  | <ul style="list-style-type: none"><li>Clearly define all team member roles in the clinical setting.</li><li>Distribute tasks evenly to all available team members who are sure of their responsibilities.</li></ul>  |
| Team Members | <ul style="list-style-type: none"><li>Seek out and perform clearly defined tasks appropriate to their abilities.</li><li>Ask for a new task or role if an assignment is beyond their level of expertise.</li><li>Take only assignments that are within their level of expertise.</li></ul> |

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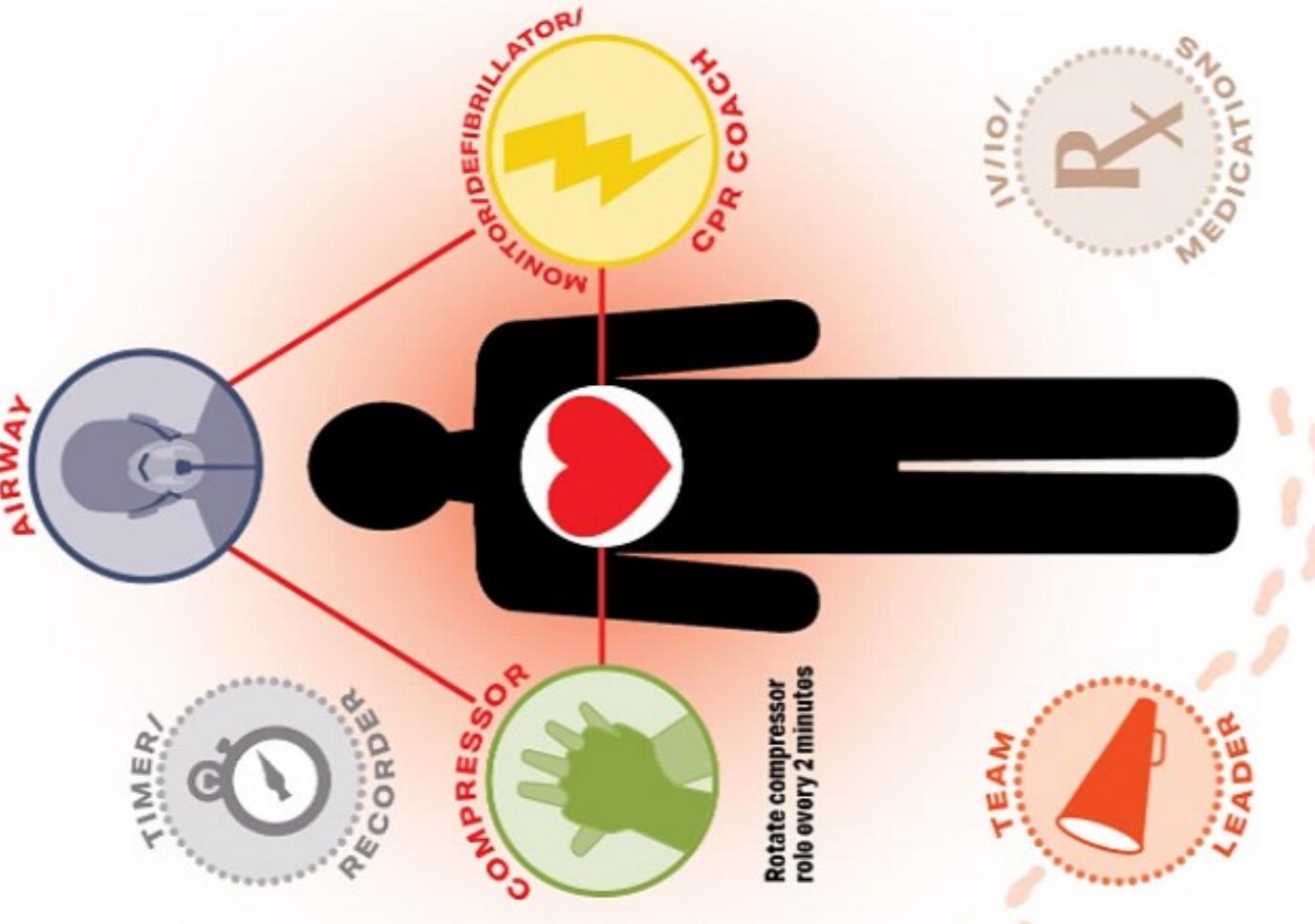
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CHALLENGE US

## Positions for 6-Person High-Performance Teams



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ELEMENTS OF EFFECTIVE TEAM DYNAMICS

 Knowing Your Limitations

Everyone on the team should know his or her own **limitations and capabilities**, including the Team Leader. This allows the Team Leader to evaluate resources and call for backup when necessary. High-performance team members should anticipate situations in which they need help and inform the Team Leader.

Team Member	Task
Team Leader and Team Members	<ul style="list-style-type: none"><li>Call for assistance early rather than waiting until the patient deteriorates.</li><li>Seek advice from more experienced personnel when the patient's condition worsens despite primary treatment.</li><li>Allow others to carry out assigned tasks, especially if the task is essential to treatment.</li></ul>
Team Members	<ul style="list-style-type: none"><li>Seek advice from more experienced personnel before starting an unfamiliar treatment or therapy.</li><li>Accept assistance from others when it is readily available.</li></ul>

PREVIOUS 1 2 3 NEXT

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Self-Assessment 

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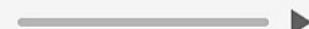


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## ELEMENTS OF EFFECTIVE TEAM DYNAMICS

### Constructive Interventions

During a resuscitation attempt, anyone on a high-performance team may need to intervene tactfully if a team member is about to take an inappropriate action.

Team Leaders should avoid confrontation with team members and, instead, debrief afterward if needed.

#### Team Member

#### Task

- | Team Member  | Task  |
|--------------|---|
| Team Leader  | <ul style="list-style-type: none"><li>Ask that a different intervention be started if it has a higher priority.</li><li>Reassign a team member who is trying to function beyond his or her level of skill.</li></ul>                        |
| Team Members | <ul style="list-style-type: none"><li>Suggest an alternative drug or dose confidently.</li><li>Question a colleague who is about to make a mistake.</li><li>Intervene if a team member is about to administer a drug incorrectly.</li></ul> |








PREVIOUS

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I KNEW GOT IT NOW THINK I GOT IT I DON'T GET IT

CHALLENGE US

## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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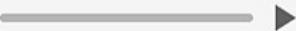


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Which member of the high-performance team has the responsibility for **assigning roles (positions)**?

CHOOSE THE CORRECT ANSWER

Airway

Timer/Recorder

Compressor

Team Leader

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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Learn more here:

Elements of Effective T...



Which member of the high-performance team has the responsibility for **assigning roles (positions)**?

You got it!

Your Answer

| Team Leader



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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Elements of Effective T...



Which high-performance team member is part of the resuscitation triangle?

You got it!

Your Answer | Monitor/Defibrillator/CPR Coach

I Know It

CHALLENGE US

NEXT

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## WHAT TO COMMUNICATE

### Knowledge Sharing

Sharing information is critical to effective team performance. When resuscitative efforts are ineffective, go back to the basics and talk as a team. Have conversations like, "Well, we've observed the following on the Primary Assessment... Have we missed something?" High-performance team members should **provide all available information about changes in the patient's condition** to ensure that the Team Leader makes appropriate decisions.

Team Member	Task
Team Leader	<ul style="list-style-type: none"><li>Encourage information sharing.</li><li>Ask for suggestions about interventions, differential diagnoses, and possible overlooked treatments (eg intravenous access or drug treatments).</li><li>Look for clinical signs that are relevant to the treatment.</li></ul>
Team Members	<ul style="list-style-type: none"><li>Share information with each other.</li><li>Accept information that will improve their roles.</li></ul>

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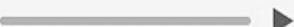
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## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## WHAT TO COMMUNICATE



## Summarizing and Reevaluating

An essential role of the Team Leader is **monitoring and reevaluating interventions**, assessment findings, and the patient's status. Team Leaders should periodically state this information to the team and announce the plan for the next few steps. Remember that the patient's condition can change. Be flexible to changing treatment plans and ask for information and summaries from the Timer/Recorder as well.

## Team Member

## Task

- | Team Member                  | Task  |
|------------------------------|---|
| Team Leader                  | <ul style="list-style-type: none"><li>Continuously revisit decisions about differential diagnoses.</li><li>Maintain an ongoing record of treatments and the patient's response.</li><li>Change a treatment strategy when new information supports it.</li><li>Inform arriving personnel of the current status and plans for further action.</li></ul> |
| Team Leader and Team Members | <ul style="list-style-type: none"><li>Note significant changes in the patient's clinical condition.</li><li>Increase monitoring if the patient's condition deteriorates (eg frequency of respirations, blood pressure).</li></ul>   |



PREVIOUS

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I DON'T GET IT

CHALLENGE US



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Learn more here:

What to Communicate



Your Answer

| Asking for suggestions about interventions



I Know It

CHALLENGE US

NEXT

Self-Assessment

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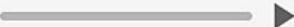


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Which is an example of summarizing and reevaluating?

CHOOSE THE CORRECT ANSWER

Questioning a colleague who is about to make a mistake

"Compressions are at a good rate"

"1 mg of epinephrine given"

Increasing monitoring if the patient's condition deteriorates

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

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Learn more here:

What to Communicate



Which is an example of summarizing and reevaluating?

You got it!

Your Answer

| Increasing monitoring if the patient's condition deteriorates



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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## HOW TO COMMUNICATE

### Closed-Loop Communications

Closed-loop communication is the process of verifying that the message sent was received as intended. It also verifies that any assigned tasks have been completed.

When communicating with high-performance team members, the Team Leader should use these **closed-loop communication steps**:

- 1 Give a message, order, or assignment to a team member.
- 2 Request a clear response and eye contact from the team member to ensure that he or she understood the message.
- 3 Confirm that the team member completed the task before you assign him or her another task.

#### Team Member

#### Task

- After receiving a task, close the loop by informing the Team Leader when the task begins or ends, such as, "The IV is in"

#### Team Members

- Give drugs only after verbally confirming the order with the Team Leader

#### Team Leader

- Always assign tasks by using closed-loop communication, such as, "Give 1 mg of epinephrine and let me know when it has been given"
- Assign additional tasks to a team member only after receiving confirmation of a completed assignment

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## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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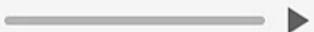
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## HOW TO COMMUNICATE



### Clear Messages

Clear messages mean **concise communication spoken with distinctive speech in a controlled voice**. All healthcare providers should deliver **clear messages** calmly and directly, without yelling or shouting. Distinct, concise messages are crucial for clear communication because **unclear communication can delay treatment or cause medication errors**. Yelling or shouting can also impair effective high-performance team interaction.

#### Team Member

#### Task

##### Team Leader

- Encourage all team members to speak clearly and use complete sentences
- Repeat orders, and question them if the slightest doubt exists

##### Team Leader and Team Members

- Be careful not to mumble, yell, scream, or shout
- Ensure that only 1 person talks at a time

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CHALLENGE US



### Self-Assessment



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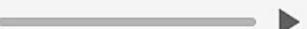


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ADVANCED BEGINNER

## HOW TO COMMUNICATE

## Mutual Respect

Finally, teams need to communicate with respect. Speak to each other in a professional manner, regardless of scope of practice or expertise. Resuscitation events are stressful, and emotions can run high. Understand that this is the nature of CPR—and remember the life you're trying to save.

The best high-performance team members mutually respect each other and work together in a collegial, supportive manner. Everyone in a high-performance team must abandon ego and show respect during the resuscitation attempt, regardless of any additional training or experience that specific team members may have.

Team Member	Task
Team Leader	<ul style="list-style-type: none"><li>Acknowledge correctly completed assignments by saying, "Thanks. Good job!"</li><li>Show interest and listen to what others say</li><li>Speak in a friendly, controlled tone of voice</li></ul>
Team Leader and	<ul style="list-style-type: none"><li>Avoid displaying aggression if teammates do not initially understand each other</li></ul>

PREVIOUS

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I KNEW

GOT IT NOW

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CHALLENGE US ?



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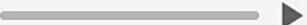


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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## HOW TO COMMUNICATE

Team Leader

- Acknowledge correctly completed assignments by saying, "Thanks. Good job!"

Team Leader and Team Members

- Show interest and listen to what others say
- Speak in a friendly, controlled tone of voice
- Avoid displaying aggression if teammates do not initially understand each other
- Understand that when one person raises his or her voice, others will respond similarly
- Try not to confuse directive behavior with aggression

 Debriefing

Not only is it important to know what to do during a cardiac arrest, but it's just as important to know how to work together as a team during an event. Debriefing as a team is an important component of every resuscitation attempt. Such debriefing during and after an attempt helps individual team members perform better, and it may also bring system strengths and deficiencies to light.

PREVIOUS

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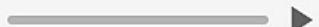


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Which is a step of closed-loop communication?

CHOOSE THE CORRECT ANSWER

Abandoning ego

Using distinctive speech and a controlled voice

Confirming task completion before assigning another task

Encouraging all team members to speak clearly

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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Learn more here:

How to Communicate



Which is a step of closed-loop communication?

You got it!



Your Answer

| Confirming task completion before assigning another task



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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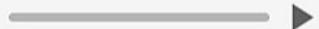
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Which are examples of mutual respect?

SELECT ALL THAT APPLY

- Acknowledging correctly completed tasks in a positive way
- Requesting a clear response and eye contact from the team member
- Giving drugs only after verbally confirming the order
- Ensuring that only 1 person talks at a time

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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Maybe this can help you?

How to Communicate



Which are examples of mutual respect?

Not there yet...

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Your Answer | Acknowledging correctly completed tasks in a positive way        |
| <input checked="" type="checkbox"/> Your Answer | Ensuring that only 1 person talks at a time                      |
| <input checked="" type="checkbox"/> Your Answer | Requesting a clear response and eye contact from the team member |
| <input checked="" type="checkbox"/> Your Answer | Giving drugs only after verbally confirming the order            |

Learn more here:  How to Communicate



Think So

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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## HIGH-QUALITY CPR

### Heart Components

To perform high-quality CPR, rescuers should

- Compress the chest hard and fast at least 2 inches (5 cm) at a rate of 100 to 120/min (30:2 or another advanced protocol that maximizes chest compression fraction).
- Allow the chest to completely recoil after each compression.
- Minimize interruption in compressions (high chest compression fraction).
- Switch compressors about every 2 minutes or earlier if fatigued. The switch should only take about 5 seconds.
- Avoid excessive ventilation.

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CHALLENGE US



Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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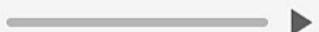


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Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## HIGH-QUALITY CPR



### Minimizing Interruptions in Chest Compressions

When you stop chest compressions, blood flow to the brain and heart stops, so you must minimize any interruptions. Additionally, try to limit interruptions for defibrillation or rhythm analysis to no longer than 10 seconds unless you are moving the patient from a dangerous environment.

#### ! Avoid

- Prolonged rhythm analysis
- Frequent or inappropriate pulse checks
- Prolonged ventilation
- Unnecessary movement of the patient

Data suggest that lower chest compression fraction (CCF) is associated with decreased ROSC and survival to hospital discharge. CCF is a measurable goal—one that providers should strive to achieve.

PREVIOUS

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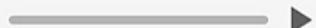
CHALLENGE US



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## HIGH-QUALITY CPR

- Frequent or inappropriate pulse checks
- Prolonged ventilation
- Unnecessary movement of the patient

Data suggest that lower chest compression fraction (CCF) is associated with decreased ROSC and survival to hospital discharge. CCF is a measurable goal—one that providers should strive to achieve.

CCF is the proportion of time during cardiac arrest resuscitation when the rescuer is performing chest compressions. CCF should be as high as possible: **at least 60%** and ideally greater than 80%.

To calculate CCF, divide chest compression time by the total code time.

$$\text{CCF} = \frac{\text{Actual chest compression time}}{\text{Total code time}}$$

PREVIOUS 1 2 3 NEXT

CHALLENGE US

### Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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Self-Assessment ?

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ADVANCED BEGINNER

## HIGH-QUALITY CPR

### Tailoring the Sequence of Rescue Actions

Guidelines recommend that healthcare providers tailor the sequence of rescue actions based on the presumed etiology of the arrest. Moreover, ACLS providers can choose the best approach (functioning within a 2-minute cycle) for their high-performance team to minimize interruptions in chest compressions and improve CCF, including protocols such as

- Continuous chest compressions with asynchronous ventilation once every 6 seconds with the use of a bag-mask device
- Compression-only CPR in the first few minutes after arrest



PREVIOUS

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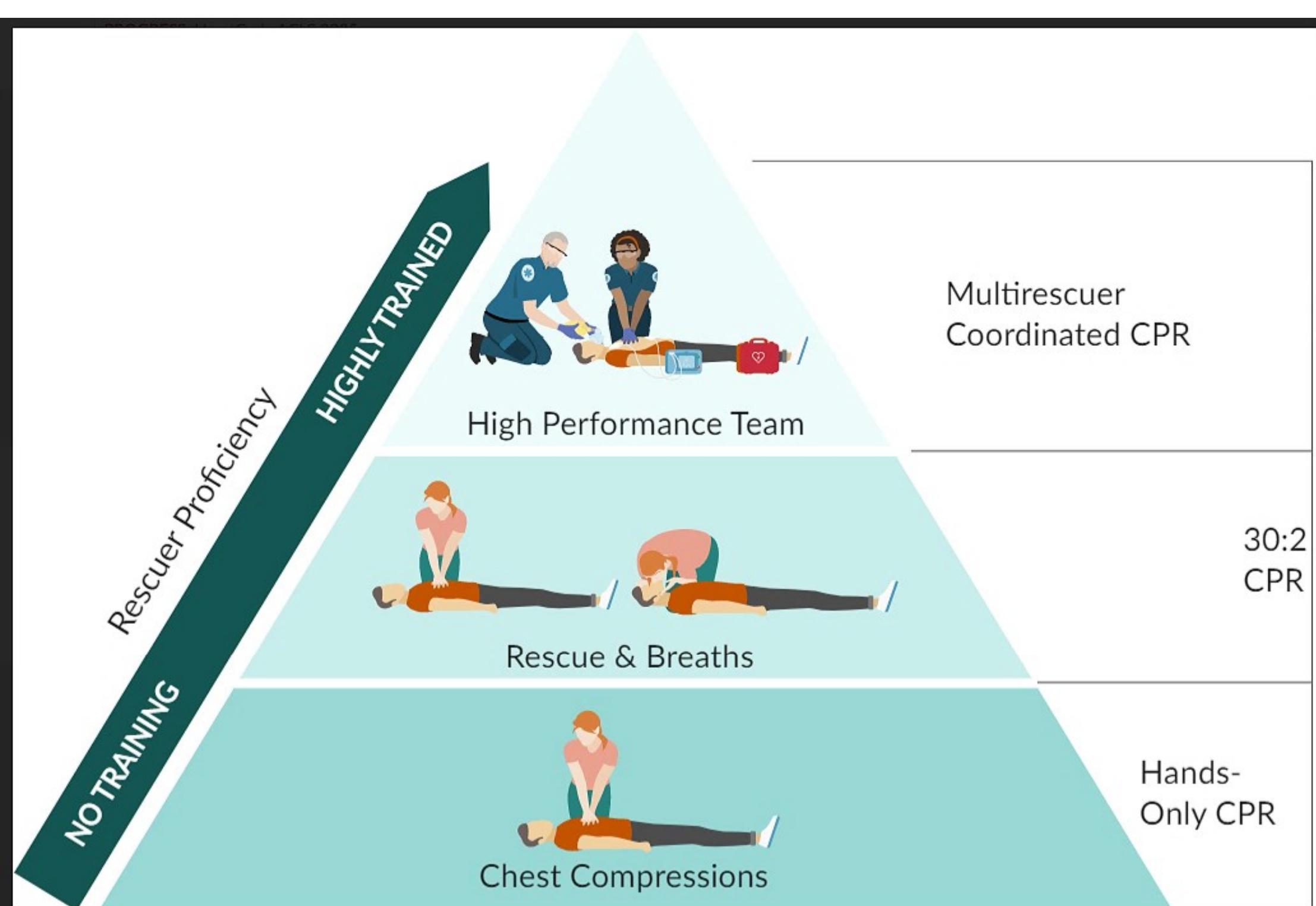
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I DON'T GET IT

CHALLENGE US ?



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Coach



Learn more here:

 High-Quality CPR

## What are the components of high-quality CPR?

You got it!

- Your Answer | Compression depth of at least 2 inches (5 cm)
- Your Answer | Complete chest recoil after each compression
- Your Answer | Avoiding excessive ventilation
- Your Answer | Switching compressors every 2 minutes  
This may be earlier if the compressor is fatigued. The switch should only take around 5 seconds.
- Your Answer | Interruptions limited to ≤10 seconds



I Know It

CHALLENGE US

NEXT

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



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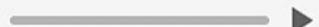
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## Coach



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Which of the following defines chest compression fraction (CCF)?

CHOOSE THE CORRECT ANSWER

$$\frac{\text{Number of compressions per minute}}{\text{Total code time}}$$
$$\frac{\text{Compression depth} \times \text{compression rate}}{\text{Total code time}}$$
$$\frac{\text{Chest compression time} + \text{ventilation time}}{\text{Total code time}}$$

$$\frac{\text{Actual chest compression time}}{\text{Total code time}}$$

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



## Coach



Learn more here:

 High-Quality CPR

Which of the following defines chest compression fraction (CCF)?

You got it!



Your Answer

Actual chest compression timeTotal code time

Chest compression fraction is the proportion of time during cardiac arrest resuscitation when the rescuer is performing chest compressions.



I Know It

CHALLENGE US

NEXT

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

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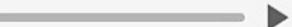
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FILL IN THE MISSING NUMBER(S)

During CPR, chest compression fraction (CCF) should be at least  |  % and ideally greater than  %.

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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TT Ahmed Othman

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Coach



Learn more here:

High-Quality CPR



During CPR, chest compression fraction (CCF) should be at least **60** % and ideally greater than **80** %.

You got it!



I Know It

CHALLENGE US

NEXT

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



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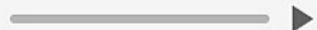
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Autoplay  OnSelf-Assessment 

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## INTERRUPTIONS IN CHEST COMPRESSIONS

### Coronary Perfusion Pressure (CPP)

It is crucial to minimize interruptions in compressions to maintain adequate CPP. CPP is aortic relaxation, or diastolic pressure, minus right atrial diastolic pressure.

**CPP = Aortic diastolic pressure - right atrial diastolic pressure**

During CPR, CPP correlates with both myocardial blood flow and ROSC. In 1 human study, ROSC did not occur unless a CPP of 15 mm Hg or greater was achieved during CPR.

When healthcare providers interrupt chest compressions, coronary perfusion pressure decreases dramatically and remains very low until compressions are resumed. It takes several compressions to build enough pressure to achieve an adequate coronary perfusion pressure necessary to get ROSC.

The higher the coronary perfusion pressure during CPR, the higher the chances of survival for patients.

This figure illustrates the relationship of quality CPR to coronary perfusion pressure demonstrating the need to minimize interruptions in compressions.

1 2 **NEXT**

CHALLENGE US 

Coach



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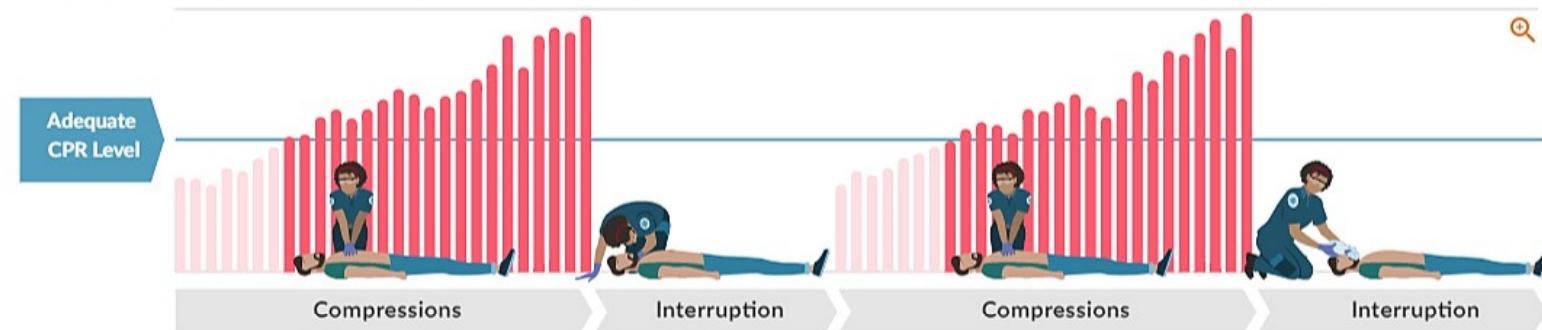
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## INTERRUPTIONS IN CHEST COMPRESSIONS

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The higher the coronary perfusion pressure during CPR, the higher the chances of survival for patients.

This figure illustrates the relationship of quality CPR to coronary perfusion pressure demonstrating the need to minimize interruptions in compressions.



### Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

1 2 **NEXT**

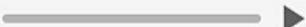
CHALLENGE US ?

Coach



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## INTERRUPTIONS IN CHEST COMPRESSIONS



### Quantitative Waveform Capnography

Because CPP or arterial diastolic pressure measurements are not readily available during a resuscitation attempt, healthcare providers can monitor CPR quality with quantitative waveform capnography using an advanced airway in place of a bag-mask device.

This uses ETCO<sub>2</sub> to estimate tissue perfusion and the quality of chest compressions.

PREVIOUS

1

2

I KNEW

GOT IT NOW

THINK I GOT IT

I DON'T GET IT

CHALLENGE US



## Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

12% PROGRESS: HeartCode ACLS 2025

AH Ahmed Othman

Coach



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Autoplay  On

How do interruptions in chest compressions negatively impact survival after cardiac arrest?

CHOOSE THE CORRECT ANSWER

Increase intrathoracic pressure

Reduce right ventricular preload

Increase intracranial pressure

Decrease coronary perfusion pressure

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



12% | PROGRESS: HeartCode ACLS 2025

~3h 59m left

TT Ahmed Othman

A



Coach



Learn more here:

Interruptions in Chest ...



How do interruptions in chest compressions negatively impact survival after cardiac arrest?

You got it!



Your Answer

| Decrease coronary perfusion pressure



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

12% PROGRESS: HeartCode ACLS 2025

~3h 59m left

## Coach



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FILL IN THE MISSING WORD(S)

Coronary perfusion pressure (CPP) equals aortic \_\_\_\_\_ pressure minus \_\_\_\_\_ atrial diastolic pressure.

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

12% PROGRESS: HeartCode ACLS 2025

~3h 59m left

### Coach



Learn more here:

Interruptions in Chest ...



Coronary perfusion pressure (CPP) equals aortic **diastolic** pressure minus **right** atrial diastolic pressure.

You got it!



CHALLENGE US

NEXT

### Self-Assessment

Adjust your competence estimate to the right to focus on the questions

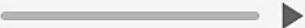


ADVANCED BEGINNER

Coach



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## DEFIBRILLATION AND SURVIVAL



### Early Defibrillation

The interval from collapse to defibrillation is one of the most important determinants of survival from cardiac arrest, and early defibrillation is critical.

- A common initial rhythm in out-of-hospital witnessed sudden cardiac arrest is ventricular fibrillation (VF).
- Pulseless ventricular tachycardia (pVT) rapidly deteriorates to VF, this is when the heart quivers and does not pump blood.
- Electrical defibrillation is the most effective way to treat VF and pVT.
- The probability of successful defibrillation decreases quickly over time.
- VF deteriorates to asystole if not treated.

### pVT → VF → Asystole

The earlier defibrillation occurs, the higher the survival rate. When VF is present, CPR can provide a small amount of blood flow to the heart and brain but cannot directly restore an organized rhythm. Restoring a perfusing rhythm is more likely with immediate CPR and defibrillation within a few minutes after the initial arrest.

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NEXT

### Self-Assessment



Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

CHALLENGE US

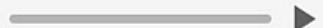




Coach



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Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

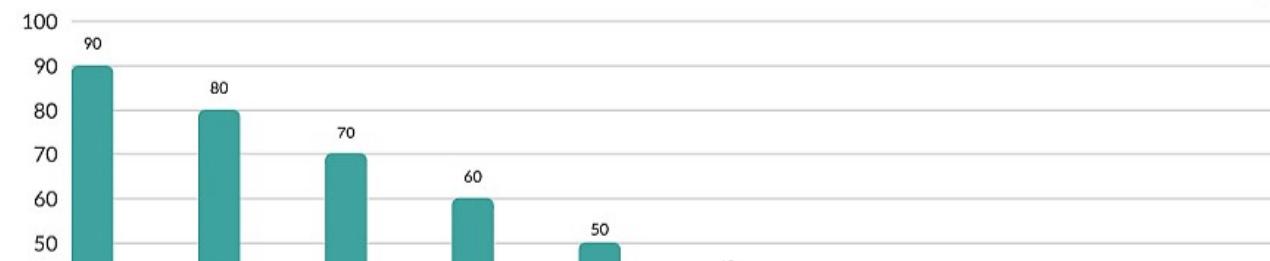
## DEFIBRILLATION AND SURVIVAL

## Early Defibrillation and Survival

For every minute that passes between collapse and defibrillation, the chance of survival from a witnessed VF sudden cardiac arrest declines by 7% to 10% per minute without bystander CPR.

When bystanders perform CPR, the decline is more gradual and averages 3% to 4% per minute. Early CPR can double or triple survival from witnessed sudden cardiac arrest at most defibrillation intervals.

Survival (%)



PREVIOUS

1

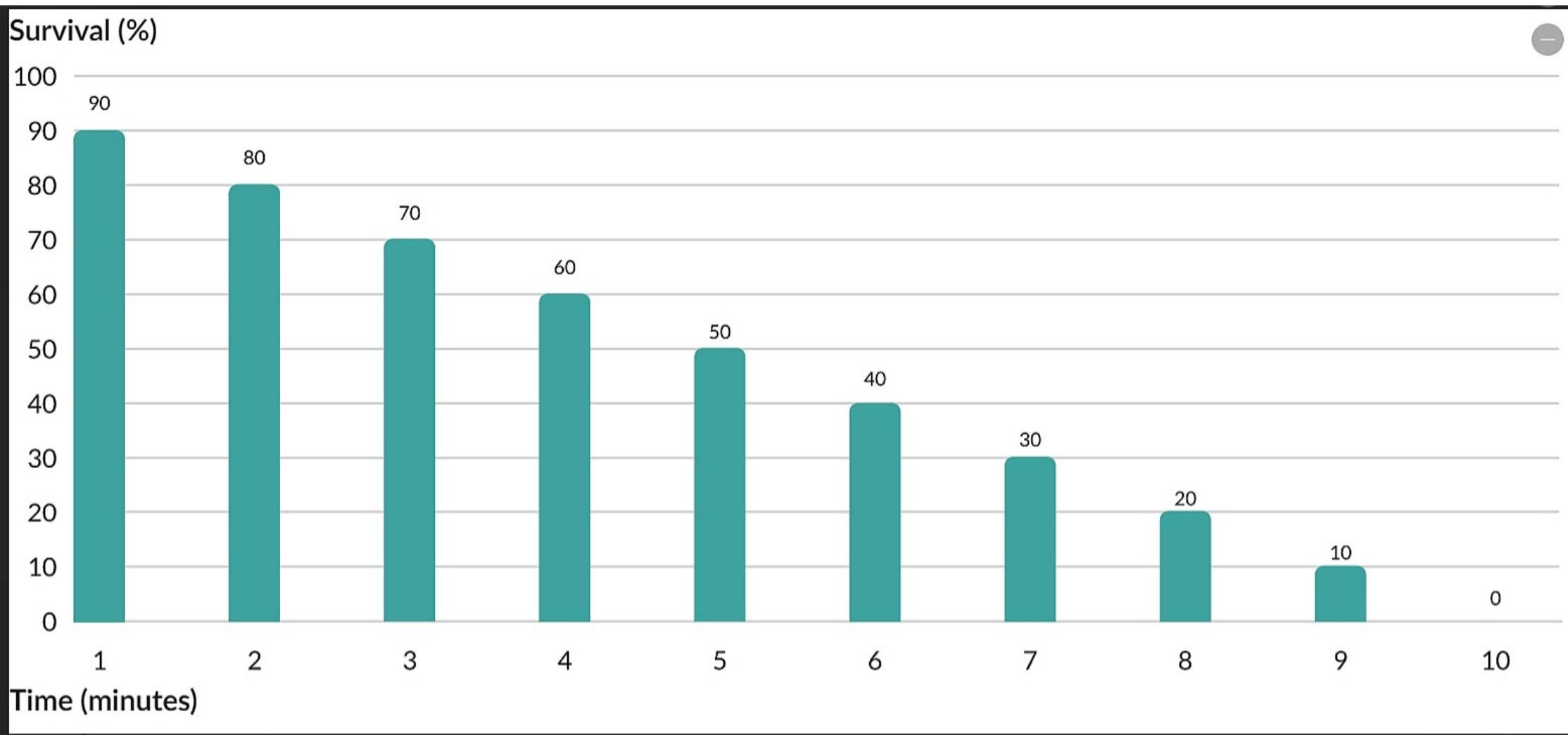
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NEXT

CHALLENGE US ?





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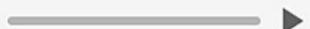
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Coach



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## DEFIBRILLATION AND SURVIVAL



### Minimizing Interruptions in Compressions During Defibrillation

The AHA does not recommend continued use of an AED or automatic mode when a manual defibrillator is available and providers can adequately interpret rhythms. Rhythm analysis and shock administration with an AED may prolong interruptions in chest compressions. Additionally, while the manual defibrillator is charging, providers should resume CPR. Shortening the interval between the last compression and the shock by even a few seconds can improve shock success (defibrillation and ROSC), so practice efficient coordination between CPR and defibrillation.

You should deliver the shock as soon as the compressor removes his or her hands from the patient's chest and all providers are clear of contact with the patient. The same compressor should resume compressions immediately after the shock is delivered.

PREVIOUS

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NEXT

CHALLENGE US



### Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions

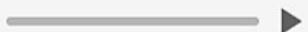


ADVANCED BEGINNER

Coach



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## DEFIBRILLATION AND SURVIVAL

### ⚠ Safe Defibrillation

To ensure safety during defibrillation, always announce the shock warning. This entire sequence should take less than 5 seconds:

- "Clear. Shocking." You do not need to use these exact words, but you must warn others that you are about to deliver shocks and that everyone must stand clear of the patient.
  - Check to make sure you are clear of contact with the patient, the stretcher, or other equipment.
  - Make a visual check to ensure that no one is touching the patient or stretcher.
  - Make sure oxygen is not flowing across the patient's chest.
- When pressing the shock button, the defibrillator operator should face the patient, not the machine. This helps to ensure coordination with the chest compressor and to verify that no one has resumed contact with the patient.

PREVIOUS

1

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3

4

I KNEW

GOT IT NOW

THINK I GOT IT

I DON'T GET IT

CHALLENGE US



## Self-Assessment



Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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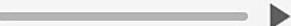


Coach



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What is the only intervention that can restore an organized rhythm in patients with ventricular fibrillation (VF)?

CHOOSE THE CORRECT ANSWER

Epinephrine administration

Early and effective defibrillation

High-quality CPR

Advanced airway insertion

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



13% PROGRESS: HeartCode ACLS 2025

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TT Ahmed Othman

A



Coach



Learn more here:

Defibrillation and Surviv...



What is the only intervention that can restore an organized rhythm in patients with ventricular fibrillation (VF)?

You got it!

Your Answer

| Early and effective defibrillation



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



13% PROGRESS: HeartCode ACLS 2025

TT Ahmed Othman

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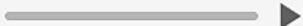
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Coach



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How quickly does the chance of survival decline for every minute of defibrillation delay in patients with ventricular fibrillation (VF) who do not receive bystander CPR?

CHOOSE THE CORRECT ANSWER

7% to 10%

5% to 6%

3% to 4%

11% to 13%

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



13% PROGRESS: HeartCode ACLS 2025

~4h left

TT Ahmed Othman



Coach



Learn more here:

Defibrillation and Surviv...



How quickly does the chance of survival decline for every minute of defibrillation delay in patients with ventricular fibrillation (VF) who do not receive bystander CPR?

You got it!

Your Answer

| 7% to 10%



I Know It

CHALLENGE US

NEXT

## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



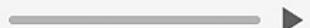
ADVANCED BEGINNER

## Coach



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## Self-Assessment



Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## SYSTEMATIC APPROACH

For optimal care, healthcare providers use a systematic approach to assess and treat acutely ill or injured patients. Not only does the systematic approach allow a standardized method for evaluating patients, it reduces the chances of missing or overlooking important signs and symptoms that need to be considered in treatment of all patients.

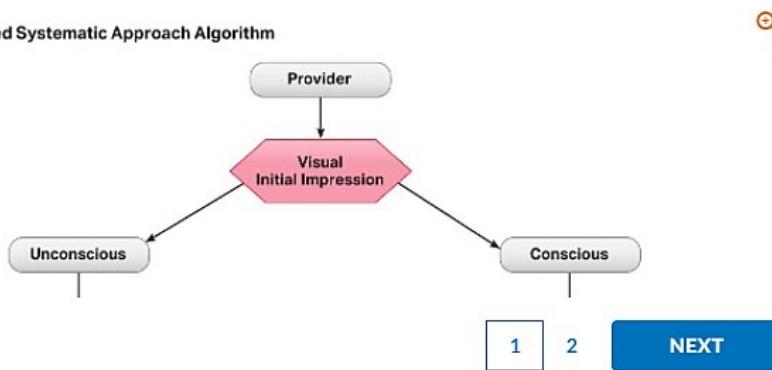


## Components of the Systemic Approach

The systematic approach consists of the following components:

- Initial impression (visualization and scene safety)
- BLS Assessment
- Primary Assessment (A, B, C, D, and E)
- Secondary Assessment (SAMPLE, H's and T's)

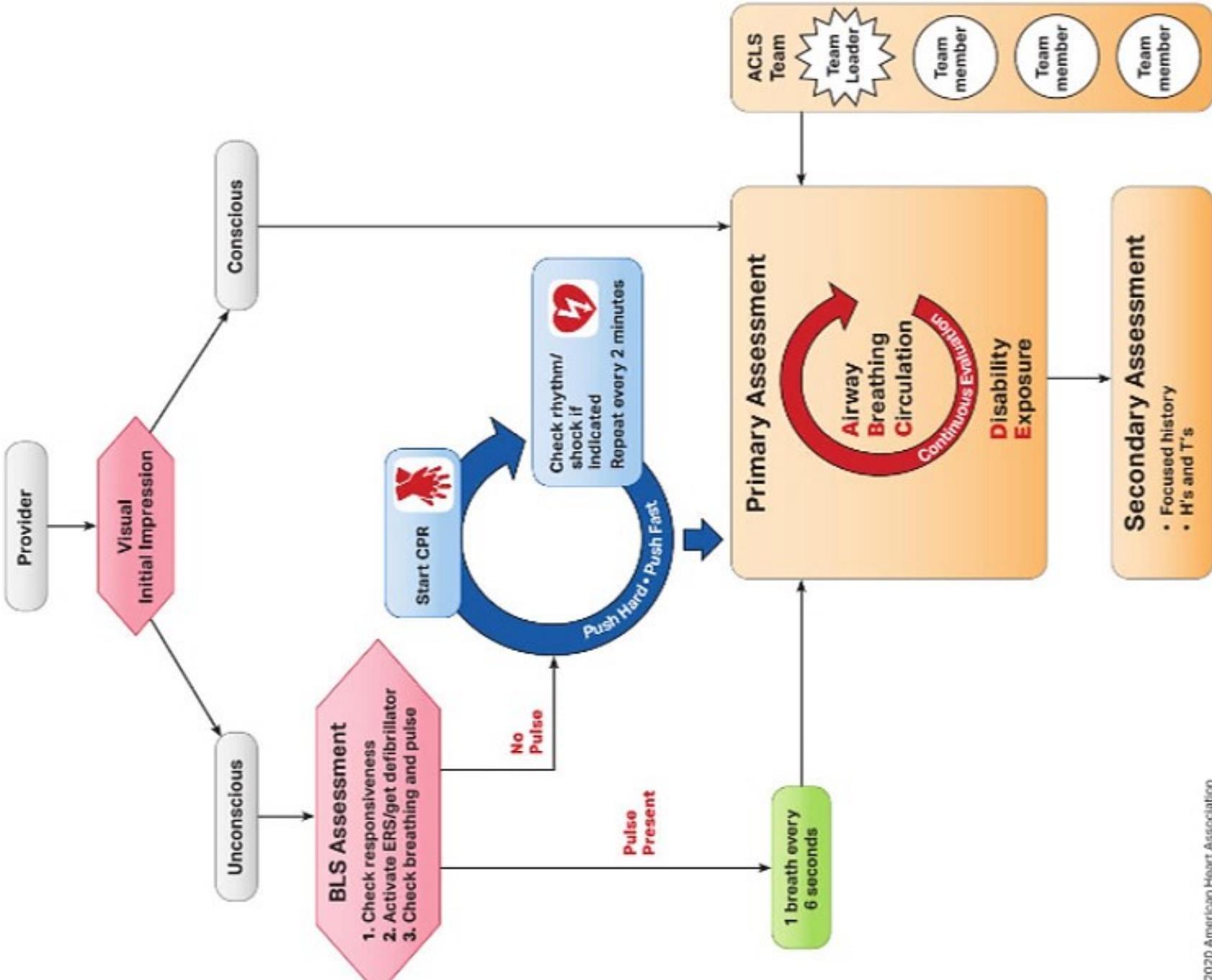
## Expanded Systematic Approach Algorithm



CHALLENGE US



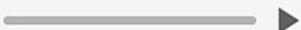
## Expanded Systematic Approach Algorithm



Coach



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## SYSTEMATIC APPROACH

### Initial Impression

Before you approach any patient, rapidly survey the scene to determine if the scene is safe and that there is no threat to the provider.

Once you've determined that the scene is safe, use the systematic approach to perform your initial impression and determine the patient's level of consciousness.

If the patient appears unconscious, use the **BLS Assessment** for the **initial evaluation**, and use the Primary and Secondary Assessments for more advanced evaluation and treatment. If the patient appears conscious, use the **Primary Assessment** for your **initial evaluation**. Intervening and stopping a patient's downward spiral is the ultimate goal of the BLS, Primary, and Secondary Assessments.

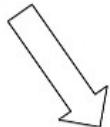
### The Systematic Approach



**Initial Impression**  
(Provider visually checks while approaching patient)



**Unconscious Patient**  
(appearance)



**Conscious Patient**  
(appearance)

PREVIOUS

1

2

I KNEW

GOT IT NOW

THINK I GOT IT

I DON'T GET IT

CHALLENGE US

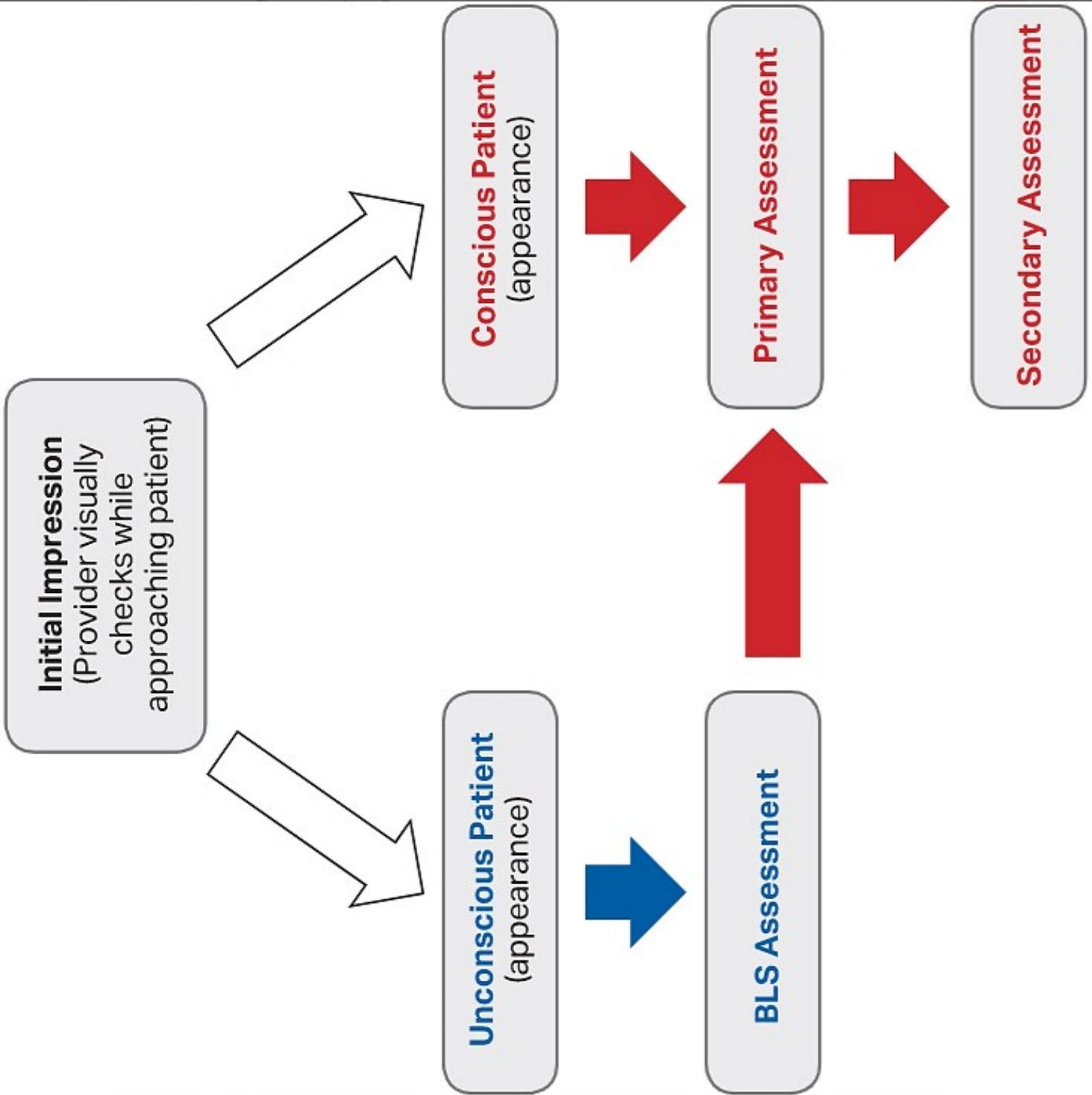


Self-Assessment

Adjust your competence estimate to the right to focus on the questions

ADVANCED BEGINNER

## The Systematic Approach





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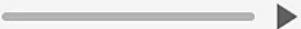


Coach



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What is an advantage of a systematic approach to patient assessment?

CHOOSE THE CORRECT ANSWER

- Reduces the chances of missing important signs and symptoms
- Permits assessment modification based on patient symptoms
- Standardizes treatment across systems of care
- Reduces the need for secondary assessment

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



14% | PROGRESS: HeartCode ACLS 2025

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TT Ahmed Othman

A

<

Coach



Learn more here:

Systematic Approach



What is an advantage of a systematic approach to patient assessment?

You got it!

Your Answer

| Reduces the chances of missing important signs and symptoms



I Know It

CHALLENGE US

NEXT

## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



15% PROGRESS: HeartCode ACLS 2025

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TT Ahmed Othman

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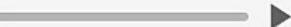


Coach



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What is the first step in the systematic approach to patient assessment?

CHOOSE THE CORRECT ANSWER

BLS Assessment

Secondary Assessment

Primary Assessment

Initial impression

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



15% PROGRESS: HeartCode ACLS 2025

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TT Ahmed Othman

A



Coach



Learn more here:

Systematic Approach



What is the first step in the systematic approach to patient assessment?

You got it!

Your Answer

| Initial impression



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



15% PROGRESS: HeartCode ACLS 2025

~4h 1m left

TT Ahmed Othman

A



Coach



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## BLS ASSESSMENT

The BLS assessment is a systematic approach to BLS for trained healthcare providers. This approach stresses early CPR with basic airway management and defibrillation, but not advanced airway techniques or drug administration. By using the BLS Assessment, any healthcare provider can support or restore effective oxygenation, ventilation, and circulation until the patient achieves ROSC or advanced providers intervene.



### Tailoring the Sequence of Rescue Actions

Single rescuers may tailor the sequence of rescue actions to the most likely cause of arrest. For example, a healthcare provider who sees an adolescent suddenly collapse after a blow to the chest, can assume that the patient has had a sudden cardiac arrest. In this case, the rescuer should activate the emergency response system, get an AED if nearby, return to the patient to attach the AED, and then provide CPR. However, if the rescuer believes hypoxia caused the cardiac arrest, such as in a drowning victim, he or she may give about 2 minutes of CPR, including breaths, before activating the emergency response system.

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NEXT

CHALLENGE US



## Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



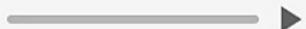
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Coach



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## Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## BLS ASSESSMENT

After verifying the scene is safe, if the patient appears unconscious, use the BLS Assessment.

### Step 1 Check for responsiveness

Tap and shout, "Are you OK?"



PREVIOUS

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NEXT

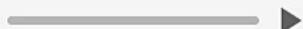
CHALLENGE US ?

Coach



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## Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## BLS ASSESSMENT

### Step 2 Shout for nearby help/activate the emergency response system and get the AED or defibrillator

- Shout for help.
- Activate the emergency response system.
- Get an AED if one is available, or send someone to activate the emergency response system and get an AED or defibrillator.



PREVIOUS 1 2 3 4 5 NEXT

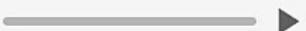
CHALLENGE US ?

## Coach



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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions

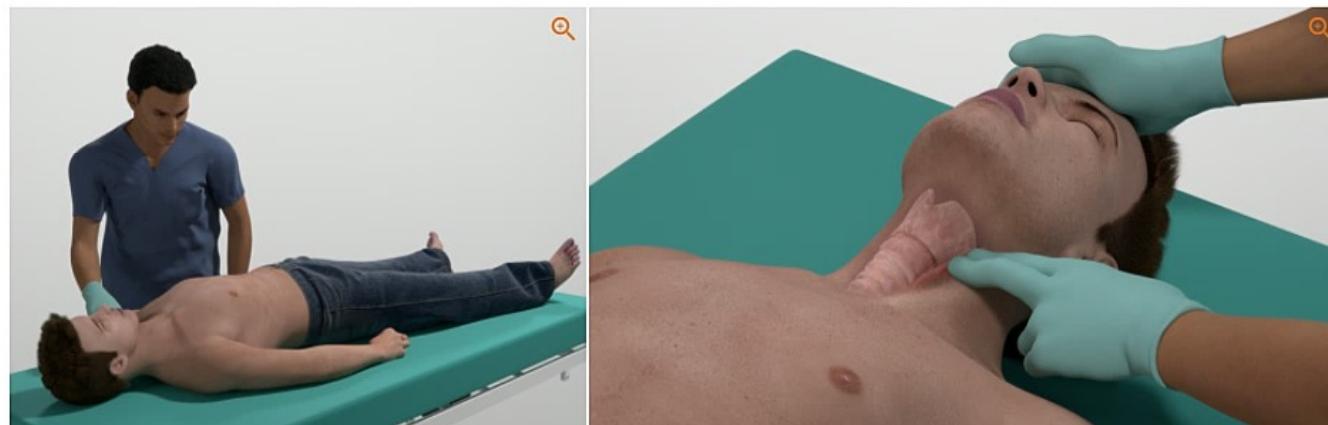


ADVANCED BEGINNER

## BLS ASSESSMENT

## Step 3 Check for breathing and pulse

- Check for absent or abnormal breathing (no breathing or only gasping) by scanning the chest for rise and fall for at least 5 but no more than 10 seconds
- Feel for a pulse for 5 to 10 seconds
- Try to perform the pulse check simultaneously with the breathing check within 10 seconds to minimize delaying CPR
- If you find a pulse, start rescue breathing at 1 breath every 6 seconds. Check the pulse about every 2 minutes.
- If you find no breathing or only gasping, and no pulse within 10 seconds, start CPR, beginning with chest compressions



PREVIOUS

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NEXT

CHALLENGE US ?

Coach



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## BLS ASSESSMENT

### Step 4 Defibrillate

- If pulse is not felt, check for a shockable rhythm with an AED/defibrillator as soon as it arrives.
- Provide shocks as indicated.
- Follow each shock immediately with CPR, beginning with compressions.



In some cases, BLS will result in ROSC, but sometimes cardiac arrest persists, requiring you to continue with more advanced, invasive measures. This is when you should follow the Primary Assessment and Secondary Assessment.

PREVIOUS 1 2 3 4 5

I KNEW

GOT IT NOW

THINK I GOT IT

I DON'T GET IT

CHALLENGE US



### Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



15% PROGRESS: HeartCode ACLS 2025

~4h 2m left

TT Ahmed Othman

A



Coach



Learn more here:

BLS Assessment



What is the maximum amount of time you should simultaneously perform the pulse and breathing checks?

You got it!

Your Answer

| 10 seconds



I Know It

CHALLENGE US

NEXT

### Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



16% PROGRESS: HeartCode ACLS 2025

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TT Ahmed Othman

A



Coach



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FILL IN THE MISSING WORD(S)

The BLS Assessment is a systematic approach to BLS for trained healthcare providers. This approach stresses \_\_\_\_\_ .

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment 

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



16% PROGRESS: HeartCode ACLS 2025

~4h 2m left

TT Ahmed Othman

A

Coach



Learn more here:

BLS Assessment



The BLS Assessment is a systematic approach to BLS for trained healthcare providers. This approach stresses early CPR and defibrillation.

You got it!



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



16% PROGRESS: HeartCode ACLS 2025

~4h 2m left

TT Ahmed Othman

A



Coach



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## PRIMARY ASSESSMENT

After completing all of the appropriate steps of the BLS Assessment, progress to the Primary Assessment for more advanced assessment and treatment.

If the patient is conscious, go directly to the Primary Assessment and then the Secondary Assessment.

You can easily remember the steps of the Primary Assessment by thinking **A-B-C-D-E**. Keep in mind that, although these steps are listed in progressive order, the resuscitation team often performs them simultaneously.

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NEXT

CHALLENGE US



## Self-Assessment



Adjust your competence estimate to the right to focus on the questions

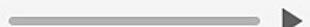


ADVANCED BEGINNER

Coach



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Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## PRIMARY ASSESSMENT

**A** Airway

For unconscious patients, healthcare providers should maintain a patent airway and consider inserting an advanced airway device. Regardless of the device chosen, the resuscitation team must ensure proper placement and use quantitative waveform capnography to monitor effectiveness. Conscious patients can often maintain the integrity of their own airway, and healthcare providers need only ensure patency by providing suctioning if needed.

**Key questions to ask:**

- Is the patient's airway patent?
- Is an advanced airway indicated?
- Have you confirmed proper placement of the airway device?
- Is the tube secured, and are you reconfirming placement frequently and with every transition?

Maintain an open airway in unconscious patients by using a head tilt-chin lift, an oropharyngeal airway, or a nasopharyngeal airway.

Use advanced airway management if needed: for example, a laryngeal mask airway, a laryngeal tube, an esophageal-tracheal tube, or an endotracheal tube. Weigh the benefits of placing an advanced airway against the adverse effects of interrupting chest compressions. If bag-mask ventilation is adequate, you may defer inserting an advanced airway until the patient does not respond to initial CPR and defibrillation or until ROSC. Advanced airway devices such as a laryngeal mask airway, a laryngeal tube, or an esophageal-tracheal tube can be placed while chest compressions continue.

PREVIOUS

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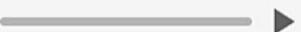
CHALLENGE US ?

## Coach



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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## PRIMARY ASSESSMENT

- Have you confirmed proper placement of the airway device?
- Is the tube secured, and are you reconfirming placement frequently and with every transition?

Maintain an open airway in unconscious patients by using a head tilt-chin lift, an oropharyngeal airway, or a nasopharyngeal airway.

Use **advanced airway management if needed**: for example, a laryngeal mask airway, a laryngeal tube, an esophageal-tracheal tube, or an endotracheal tube. Weigh the benefits of placing an advanced airway against the adverse effects of interrupting chest compressions. If bag-mask ventilation is adequate, you may defer inserting an advanced airway until the patient does not respond to initial CPR and defibrillation or until ROSC. Advanced airway devices such as a laryngeal mask airway, a laryngeal tube, or an esophageal-tracheal tube can be placed while chest compressions continue.

**If using advanced airway devices**

- Confirm the proper integration of CPR and ventilation.
- Confirm the proper placement of advanced airway devices by physical examination and quantitative waveform capnography.
- Secure the device to prevent dislodgment.
- Monitor airway placement, effectiveness of CPR, and ROSC with continuous quantitative waveform capnography.

PREVIOUS 1 2 3 4 5 NEXT

CHALLENGE US ?

Coach



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## PRIMARY ASSESSMENT

### B Breathing

If the patient is not in cardiac arrest, healthcare providers should assist ventilation as needed once every 6 seconds. If the patient does not require assisted ventilation, healthcare providers can support the patient by administering oxygen as needed.

#### Key questions to ask:

- Are ventilation and oxygenation adequate?
- Are quantitative waveform capnography and oxyhemoglobin saturation monitored?

Give supplemental oxygen when indicated. For cardiac arrest patients, administer 100% oxygen. For others, adjust the oxygen administration to achieve oxygen saturation of 95% to 98% by pulse oximetry (90% for ACS and 92% to 98% for post–cardiac arrest care).

PREVIOUS

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NEXT

CHALLENGE US



## Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



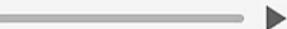
ADVANCED BEGINNER

## Coach



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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



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## PRIMARY ASSESSMENT

**C** Circulation

In this step, you should attach ECG leads and establish intravenous (IV), or intraosseous (IO) access. Give appropriate drugs to manage abnormal rhythms, and assess for perfusion issues. You are collecting a wide range of information, including blood pressure, heart rate, and cardiac rhythm. Additional data, such as temperature and glucose levels, may further refine the initial interventions needed.

**Key questions to ask:**

- Are chest compressions effective?
- What is the cardiac rhythm?
- Is defibrillation or cardioversion indicated?
- Has intravenous (IV)/intraosseous (IO) access been established?
- Is ROSC present?
- Is the patient with a pulse unstable?
- Are medications needed for rhythm or blood pressure?
- Does the patient need volume (fluid) for resuscitation?

## Circulation Monitoring

PREVIOUS 1 2 3 4 5 NEXT

CHALLENGE US ?

Coach



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## Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## PRIMARY ASSESSMENT

## Circulation Monitoring

Monitor CPR quality with quantitative waveform capnography. [Details](#)If intra-arterial pressure monitoring is available, strive to optimize blood pressure. [Details](#)

## Circulation interventions:

- Attach monitor/defibrillator for arrhythmias or cardiac arrest rhythms:
  - Ventricular fibrillation (VF)
  - Pulseless ventricular tachycardia (pVT)
  - Asystole
  - Pulseless electrical activity (PEA)
- Provide defibrillation/cardioversion
- Establish IV/IO access
- Give appropriate drugs to manage rhythm and blood pressure
- Give IV/IO fluids if needed
- Check glucose and temperature
- Check perfusion issues

PREVIOUS

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NEXT

CHALLENGE US

Coach



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## PRIMARY ASSESSMENT

- Are medications needed for rhythm or blood pressure?
- Does the patient need volume (fluid) for resuscitation?

### Circulation Monitoring

Continuous quantitative waveform capnography provides an **indirect measure of cardiac output during chest compressions**, because the amount of carbon dioxide exhaled is associated with the amount of blood that passes through the lungs.

If the partial pressure of CO<sub>2</sub> in exhaled air at the end of the exhalation phase, or PETCO<sub>2</sub>, is less than 10 mm Hg, attempt to improve CPR quality.

Waveform capnography should be as high as possible with improved CPR quality. An ETCO<sub>2</sub> less than 10 mm Hg during chest compressions rarely results in ROSC. Conversely, a sudden increase in PETCO<sub>2</sub> to more than 25 mm Hg may indicate ROSC.

CLOSE

- Asystole
- Pulseless electrical activity (PEA)
- Provide defibrillation/cardioversion
- Establish IV/IO access
- Give appropriate drugs to manage rhythm and blood pressure

PREVIOUS 1 2 3 4 5 NEXT

CHALLENGE US

### Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



Coach



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Autoplay  On

## PRIMARY ASSESSMENT

- Are medications needed for rhythm or blood pressure?
- Does the patient need volume (fluid) for resuscitation?

## Circulation Monitoring

Monitor CPR quality with quantitative waveform capnography. [Details](#) ▾

If intra-arterial pressure is less than 20 mm Hg, attempt to improve CPR quality.

Intra-arterial pressure should be as high as possible with improved CPR quality.

## Circulation

- Attach radial arterial line
  - Venous bleeding
  - Pulseless ventricular tachycardia (PVT)
  - Asystole
  - Pulseless electrical activity (PEA)
- Provide defibrillation/cardioversion
- Establish IV/IO access
- Give appropriate drugs to manage rhythm and blood pressure

CLOSE

Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



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PREVIOUS 1 2 3 4 5 NEXT

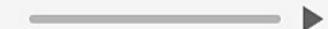
CHALLENGE US ?

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## PRIMARY ASSESSMENT

### D Disability

This involves checking for neurological function. Quickly assess for responsiveness, levels of consciousness, and pupil dilation. A quick tool that can be used to evaluate neurological status is AVPU: Alert, Voice, Painful, and Unresponsive.

### E Exposure

Remove clothing to perform a physical examination, looking for obvious signs of trauma, bleeding, burns, unusual markings, or medical alert bracelets.

PREVIOUS

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I KNEW

GOT IT NOW

THINK I GOT IT

I DON'T GET IT

CHALLENGE US



## Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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TT Ahmed Othman

A



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Autoplay On



- While performing the BLS Assessment, you initiate **high-quality CPR** and assist ventilation with a bag-mask device.
- The AED does **not recommend a shock**.

Which action in the **Primary Assessment** should you perform first?

CHOOSE THE CORRECT ANSWER

Determine if the patient's airway is patent

Perform fluid resuscitation

Assess the patient's oxygenation status

Attach a quantitative waveform capnography device

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



16% PROGRESS: HeartCode ACLS 2025

~4h 3m left

TT Ahmed Othman

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Learn more here:

Primary Assessment



While performing the BLS Assessment, you initiate high-quality CPR and assist ventilation with a bag-mask device.

The AED does not recommend a shock.

Which action in the Primary Assessment should you perform first?

You got it!

Your Answer | Determine if the patient's airway is patent

I Know It CHALLENGE US NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



17% PROGRESS: HeartCode ACLS 2025

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TT Ahmed Othman

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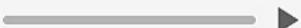


Coach



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Autoplay  On



- The initial assessment reveals a conscious patient.
- The patient's airway is patent, and an advanced airway is not indicated.

Which action in the Primary Assessment should you perform next?

Not there yet...

Your Answer | Check for the presence of a pulse

Correct Answer | Administer oxygen as needed



Think So

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



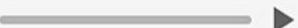
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## Coach



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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## SECONDARY ASSESSMENT

The secondary assessment involves the differential diagnosis. This involves obtaining a focused medical history and searching for and treating reversible causes (H's and T's).

Consider using the memory aid **SAMPLE**. This consists of signs and symptoms, allergies, medications, past medical history, last meal consumed and events. The answers to these questions can help you quickly rule in or rule out suspected diagnoses.

- S**
- Breathing difficulty
  - Tachypnea and tachycardia
  - Fever and headache
  - Abdominal pain
  - Bleeding

- A**
- Medications, allergies, foods, latex
  - Associated reactions

- M**
- Patient medications, including over-the-counter, vitamins, inhalers, and herbal supplements
  - Last dose and time of recent medications
  - Medications that can be found in the patient's home

1

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NEXT

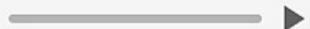
CHALLENGE US ?

## Coach



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Self-Assessment ?

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## SECONDARY ASSESSMENT

- M**
- Patient medications, including over-the-counter, vitamins, inhalers, and herbal supplements
  - Last dose and time of recent medications
  - Medications that can be found in the patient's home

- P**
- Health history (eg, previous illnesses, hospitalizations)
  - Family health history (in cases of ACS or stroke)
  - Significant underlying medical problems
  - Past surgeries
  - Immunization status

- L**
- Time and nature of last intake of liquid or food

- E**
- Events leading to current illness or injury (eg, onset sudden or gradual, type of injury)
  - Hazards at scene
  - Treatment during interval from onset of disease or injury until evaluation
  - Estimated time of onset (if out of hospital)

1 2 **NEXT**

CHALLENGE US ?



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TT Ahmed Othman

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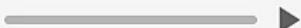


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## SECONDARY ASSESSMENT

Next, look for and treat the underlying cause by considering the H's and T's, to ensure you are not overlooking a dangerous or likely possibility.

### H's

- Hypovolemia is low blood volume.
- Hypoxia occurs when inadequate oxygen is reaching the body's tissues.
- Hydrogen ion (acidosis) is the accumulation of acid and hydrogen ions in the blood and body tissues.
- Hypo-/hyperkalemia is an abnormally high or low concentration of potassium ions in the blood.
- Hypothermia is when the body temperature drops below 95°F, or 35°C. Hypothermia is a potentially reversible cause of cardiac arrest and other emergency cardiopulmonary conditions.

### T's

- Tension pneumothorax results from an abnormal accumulation of air in the pleural space.
- Tamponade (cardiac) is a condition caused by an accumulation of fluid between the heart and the pericardium.
- Toxins may be best uncovered by a focused history.
- Thrombosis (pulmonary), or pulmonary embolism, is a blood clot from a large vein that breaks off and travels to the pulmonary artery where it becomes lodged.

PREVIOUS

1

2

I KNEW

GOT IT NOW

THINK I GOT IT

I DON'T GET IT

CHALLENGE US



Self-Assessment

Adjust your competence estimate to the right to focus on the questions



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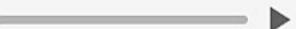
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Coach



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Autoplay  OnSelf-Assessment 

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER

## SECONDARY ASSESSMENT

## H's

- Hypovolemia is low blood volume.
- Hypoxia occurs when inadequate oxygen is reaching the body's tissues.
- Hydrogen ion (acidosis) is the accumulation of acid and hydrogen ions in the blood and body tissues.
- Hypo-/hyperkalemia is an abnormally high or low concentration of potassium ions in the blood.
- Hypothermia is when the body temperature drops below 95°F, or 35°C. Hypothermia is a potentially reversible cause of cardiac arrest and other emergency cardiopulmonary conditions.

## T's

- Tension pneumothorax results from an abnormal accumulation of air in the pleural space.
- Tamponade (cardiac) is a condition caused by an accumulation of fluid between the heart and the pericardium.
- Toxins may be best uncovered by a focused history.
- Thrombosis (pulmonary), or pulmonary embolism, is a blood clot from a large vein that breaks off and travels to the pulmonary artery where it becomes lodged.
- Thrombosis (coronary) is a blood clot that forms within a blood vessel of the coronary system.

PREVIOUS

1

2

I KNEW

GOT IT NOW

THINK I GOT IT

I DON'T GET IT

CHALLENGE US 



17% PROGRESS: HeartCode ACLS 2025

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TT Ahmed Othman

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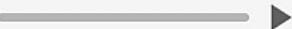


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Which action is part of the **Secondary Assessment of a conscious patient?**

CHOOSE THE CORRECT ANSWER

Attach a monitor/defibrillator

Give IV/IO fluids if needed

Formulate a differential diagnosis

Determine the patient's level of consciousness

I KNOW IT

THINK I KNOW IT

NOT SURE

NO IDEA

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



17% PROGRESS: HeartCode ACLS 2025

~4h 6m left

TT Ahmed Othman

A



Coach



Learn more here:

Secondary Assessment



Which action is part of the **Secondary Assessment** of a conscious patient?

You got it!

Your Answer

| Formulate a differential diagnosis



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER



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TT Ahmed Othman

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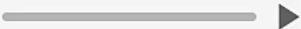


Coach



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Answer the following questions regarding the reversible causes of cardiac arrest.

1

2

Which of the following are the "H" causes of reversible cardiac arrest?

You got it!

- Your Answer | Hypovolemia
- Your Answer | Hypoxia
- Your Answer | Acidosis
- Your Answer | Hypothermia
- Your Answer | Hyperkalemia/Hypokalemia



I Know It

CHALLENGE US

NEXT

Self-Assessment

Adjust your competence estimate to the right to focus on the questions



ADVANCED BEGINNER